

Agronomy "Crib" Notes

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Seed Tags – Interpretations and Use

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Many of our most effective conservation practices are vegetative practices. The seeding component of practices such as pasture and hayland planting, grassed waterways, filter and buffer strips, cover crops, and critical area planting is often the most critical element in the success of the practice. For a successful stand, we must start with the seed.

You can buy seed in two ways—in bulk or by pure live seed (PLS). When you buy seed in bulk you are buying whatever is in the bag by the pound, which will include good viable seed, dormant seed, non-viable seed, other seed, and also chaff and other inert material. When you buy seed by PLS, you are buying the known viable live seed in the lot of bulk seed. Either way you buy it, ***always plant it by the PLS rate.***



Bulk warm season grass seed is generally lower in germination and purity than cool season grasses.

Using PLS rates insures adequate stands for the intended purpose. Ideal rates insure proper plant density for the practice being planned. Seed must be tested by a lab. This includes all bin run seed for cover crops. Seed tags are needed for all plantings.

The Natural Resources Conservation Service (NRCS) requires seed to be tested and labeled according to the Indiana Seed Law (IC 15-15-1). Tested seed is not the same as using the term “Certified Seed.” Certified seed is more commonly used for trademark and patent entanglements and genetic purity assurances by the seed industry. Tested seed is also checked for prohibited noxious weeds. ***Clean seed is important to prevent the spread of potential invasives and herbicide resistant weeds.***

The percent purity is the physical composition of a seed lot. It is the percent of the bulk that is viable seed and not other crop or weed seeds, soil, plant parts, coatings, or other foreign material.

The percent germination is the percent of the seed sample that germinates into a live seedling during testing. This can include hard and/or dormant seed which often does not germinate the first year. Some seed need stratification or scarification to germinate. Quite often, older seed germinates better than new seed. If the seed is too fresh (grown same year as sown), you can have delayed germination. This dormancy is a species protection mechanism for preservation. Dormancy is always highest at seed harvest and gradually reduces with time. This is especially true with warm season grasses. Some companies stratify seed to break its dormancy. If the vegetation is a critical element in the success of the conservation practice (such as a grassed waterway or critical area seeding), then hard or dormant seed should not be included in the calculation. If it is not critical for success, such as adding a legume to a pasture, then include it:

For critical practices (grassed waterways or where a quick stand is needed):

$$\% \text{ Pure Live Seed} \times \% \text{ Germination} = \text{PLS}$$

For non-critical practices (forage, wildlife):

$$\% \text{ Pure Live Seed} \times (\% \text{ Germination} + \% \text{ Dormant}) = \text{PLS}$$



Keep your tags and labels for documentation.

Example (grassed waterways or where a quick stand is needed):

90% Pure Seed x 90% Germination = 81% PLS

81% of the lot of bulk seed is live seed (81% of the bulk seed has potential to germinate)

Example (non-critical practices such as forage, wildlife):

90% Pure Seed x (70% Germination + 20% Dormant) = 81% PLS

So if you need 8 pounds of PLS of red clover per acre you then figure 8 pounds PLS / 81% (.81) = 9.87 pounds of bulk seed needed to actually get 8 pounds of viable seed on the site.

Like a lot of things, a bargain may not be a bargain after all. For example, let's look at two lots of seed and determine which one is the better buy:

- Lot #1 - 74% germination, 98% purity at \$1.80 per pound
- Lot #2 - 62% germination, 78% purity at \$1.20 per pound

In this case the price is the same at \$2.48 per pound of pure live seed. ($\$1.80 / .7252$ (.74x.98) and $\$1.20 / .4836$ (.62x.78)), but you will be planting quite a bit more bulk seed in the planter with lot number two. Using the same example of 8 pounds PLS of red clover, lot #1 would require 11 pounds of bulk seed to get the 8 pounds of PLS (8 lbs. PLS / .7252) and Lot #2 would require 16.5 pounds of bulk seed to get the same 8 pounds of PLS per acre (8 lbs. PLS / .4836).

Things to remember:

- Use lab tested seed (Office of the State Chemist can test seed);
 - ***Do not plant the seed lot if it contains species of weed seeds that may become troublesome.***
- Figure PLS rates from seed tags and plant enough bulk seed to apply the correct PLS rate ;
- Keep copies of seed tags for documentation;
- When practical and possible, compare lots of seed and utilize improved and tested varieties, where applicable.



Clover seed can contain a small percentage of hard seed that probably won't come up the planting year.



Obtaining an ideal plant density for the intended purpose is the ultimate goal.

Reminders & Additional Resources

Office of Indiana State Chemist - <http://www.oisc.purdue.edu/seed/contact.html>



Indiana NRCS Seeding Guidelines -

http://efotg.sc.egov.usda.gov/references/public/IN/Indiana_Seeding_Tool_Seeding_Guidelines.pdf

Prior issues of Crib Notes are located at <http://www.in.nrcs.usda.gov/technical/agronomy/agronomy.html>